

## Unsteady and Steady State in Natural Convection

**Authors :** Syukri Himran, Erwin Eka Putra, Nanang Roni

**Abstract :** This study explains the natural convection of viscous fluid flowing on semi-infinite vertical plate. A set of the governing equations describing the continuity, momentum and energy, have been reduced to dimensionless forms by introducing the references variables. To solve the problems, the equations are formulated by explicit finite-difference in time dependent form and computations are performed by Fortran program. The results describe velocity, temperature profiles both in transient and steady state conditions. An approximate value of heat transfer coefficient and the effects of Pr on convection flow are also presented.

**Keywords :** natural convection, vertical plate, velocity and temperature profiles, steady and unsteady

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